

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (previously presented): A millimeter wave imaging system comprising:

- A) a millimeter wave frequency scanning antenna for collecting frequency dependent beams of millimeter wave radiation from a narrow one-dimensional field of view;
- B) a millimeter wave amplifier for amplifying at the collected frequencies said millimeter wave radiation;
- C) a beam-former for separating said amplified collected radiation to produce frequency dependent signals corresponding to said frequency dependent beams, said beam-former comprising:
 - 1) a plurality of delay lines,
 - 2) a millimeter wave lens, and
 - 3) a plurality of millimeter wave power detectors; and
- D) a sampling circuit for reading out frequency dependent signals to produce a one-dimensional image of the antenna field of view.

Claims 2-9 (cancelled)

Claim 10 (previously presented): An imaging system as in Claim 1 wherein said one frequency scanning is at least 20 inches long.

Claim 11 (previously presented): An imaging system as in Claim 1 wherein said one frequency scanning antenna is about 26 inches long and comprises about 300 inclined slots functioning as receiving apertures.

Claim 12 (previously presented): An imaging system as in Claim 8 wherein said at least one frequency scanning antenna is one frequency scanning antenna.

Claim 13 (previously presented): An imaging system as in Claim 8 wherein said one frequency scanning is at least 20 inches long.

Claim 14 (previously presented): An imaging system as in Claim 8 wherein said one frequency scanning antenna is about 26 inches long and comprises about 300 inclined slots functioning as receiving apertures.

Claim 15 (previously presented): An imaging system as in Claim 1 wherein said millimeter wave imaging system is a single stick millimeter wave imaging system comprising:

- A) a single millimeter wave frequency scanning antenna for collecting frequency dependent beams of millimeter wave radiation from a narrow one-dimensional field of view;
- B) a millimeter wave amplifier for amplifying at the collected frequencies said millimeter wave radiation;
- C) a beam-former for separating said amplified collected radiation to produce frequency dependent signals corresponding to said frequency dependent beams, said beam-former comprising:
 - 1) a plurality of delay lines,
 - 2) a millimeter wave lens, and
 - 3) a plurality of millimeter wave power detectors; and
- D) a sampling circuit for reading out frequency dependent signals to produce a one-dimensional image of the antenna field of view.

Claim 16 (previously presented): An imaging system as in Claim 15 and also comprising a focusing means for focusing said frequency-scanning antenna.

Claim 17 (previously presented): An imaging system as in Claim 15 wherein said focusing means comprises a cylindrical reflector and a cylindrical lens.

Claim 18 (previously presented): An imaging system as in Claim 15 wherein said millimeter wave amplifier comprises three MMIC amplifiers fabricated on an indium phosphate substrate and a band pass filter.

Claim 19 (previously presented): An imaging system as in Claim 15 wherein said amplifier comprises a co-planar waveguide design.

Claim 20 (previously presented): An imaging system as in Claim 15 wherein said amplifier provides gains of at least 50 dB.

Claim 21 (previously presented): An imaging system as in Claim 15 wherein said delay lines are comprised of etched copper to create circuit patterns of varying lengths.

Claim 22 (previously presented): An imaging system as in Claim 15 wherein said delay lines define copper surfaces having surface roughness less than 300 nanometers.

Claim 23-37 (cancelled)